CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

ORDER NO. 89-007
NPDES NO. CA0029475

WASTE DISCHARGE REQUIREMENTS FOR:

AMPEX CORPORATION
824 SAN ALESO AVENUE FACILITY
SUNNYVALE, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

1. Ampex Corporation, (hereinafter called the discharger), by application dated July 6, 1988, has applied for issuance of waste discharge requirements and a permit to discharge waste under the National Pollutant Discharge Elimination System (NPDES).

2. The discharger has been the sole occupant of a facility at 728 San Aleso Avenue since the building's construction in 1968. The facility was initially used for research, development and manufacturing of metal disc recording media. Information storage discs were manufactured at the site from 1973 to 1986. The facility has been used only for offices since then.

3. Subsurface investigations initiated in early 1983 have detected the presence of several chlorinated solvents in ground water beneath and in the vicinity of the site and in onsite soil. The primary constituents that have been detected are trichloroethylene, 1,1,1-trichloroethane, 1,1-dichloroethylene, 1,1-dichloroethane, and (cis + trans)-1,2-dichloroethylene.

4. The discharger initiated interim cleanup of the shallow ground water beneath the site in April 1986. A ground water extraction and treatment system was installed onsite at 728 San Aleso Avenue to prevent further contaminant migration offsite. Treated ground water from this system was discharged to the sanitary sewer system. Evaluations of this onsite extraction system have shown a decrease in the concentration of the solvents in wells in the vicinity of the site.

5. The migration of contaminants detected in ground water offsite and downgradient from the site has continued to a distance of at least 1900 feet downgradient of the site. The discharger

seeks to minimize further migration of chlorinated solvents and contain affected shallow ground water by installing a series of extraction wells along Ahwanee Drive approximately 1600 feet downgradient of the facility. Extraction wells will be installed at other locations as needed.

6. The discharger proposes to install a new air stripping system consisting of two air stripping towers in series at 824 San Aleso Avenue, a facility used for the manufacture of ceramic parts for the electronics industry also owned by Ampex Corporation. This new location is necessary because Ampex will be selling the 728 San Aleso Avenue facility. The existing air stripping tower at 728 San Aleso Avenue will be taken out of service and removed.

7. The discharger proposes to discharge an average of 21,600 gallons per day and a maximum of 36,000 gallons per day of treated ground water to a storm drain on San Aleso Avenue which is tributary to the City of Sunnyvale's East Channel, Guadalupe Slough and South San Francisco Bay.

8. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives for South San Francisco Bay.

9. The existing and potential beneficial uses of Guadalupe Slough and South San Francisco Bay include:

   - Contact and non-contact water recreation
   - Wildlife habitat
   - Preservation of rare and endangered species
   - Estuarine habitat
   - Fish spawning and migration
   - Industrial service supply
   - Shellfishing
   - Navigation
   - Ocean commercial and sport fishing

10. The Basin Plan prohibits discharge of wastewater which has "particular characteristics of concern to beneficial uses" (a) "at any point in San Francisco Bay south of the Dumbarton Bridge" and (b) "at any point where the wastewater does not receive a minimum initial dilution of at least 10:1 or into any nontidal water, dead-end slough, similar confined water, or any immediate tributary thereof".

11. The Basin Plan allows for exceptions to the prohibitions referred to in Finding 10 above when it can be demonstrated that a net environmental benefit can be derived as a result of the discharge.

12. Exceptions to the prohibitions referred to in Finding 10 are warranted because this discharge is an integral part of a program to cleanup polluted ground water and thereby produce an environmental benefit, and because receiving water concentrations are expected to be below levels that would affect beneficial uses. Should studies indicate chronic effects, not currently anticipated, the Board will review the requirements of this Order based upon section B.1.e.

13. The Basin Plan prohibits discharge of "all conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin". The discharger's ground water extraction and treatment system and associated operation, maintenance, and monitoring plan constitutes an acceptable control program for minimizing the discharge of toxicants to waters of the State.

14. Effluent limitations of this Order are based on the Basin Plan, State and U. S. Environmental Protection Agency (EPA) plans and policies, and best engineering and geologic judgement. EPA Region IX draft guidance "NPDES Permit Limitations for Discharge of Contaminated Groundwater: Guidance Document" was also considered in the determination of effluent limits.

15. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

16. The Board has notified the discharger and interested agencies and persons of its intent to issue waste discharge requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

17. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. EFFLUENT LIMITATIONS

1. The discharge to the storm drain from the treatment system shall not contain constituents in excess of the following limits:

Constituent	Instantaneous Maximum (ug/l)
trichloroethylene	5
1,1,1-trichloroethane	5
1,1-dichloroethane	5
1,1-dichloroethylene	5
(cis + trans)-1,2-dichloroethylene	5
1,2-dichloroethane	1
perchloroethylene	4
Total concentration of all volatile organic chemicals (VOCs)	100

2. The pH of the discharge shall not exceed 8.5 nor be less than 6.5.

3. In any representative set of samples, the discharge of waste shall meet the following limit of quality:

   Toxicity: The survival of rainbow trout in 96-hour bioassays of the effluent as discharged shall be a median of 90% survival and a 90 percentile value of not less than 70% survival.

B. RECEIVING WATER LIMITATIONS

1. The discharge of wastes shall not cause the following conditions to exist in waters of the State at any place:

   a. floating, suspended, or deposited macroscopic particulate matter or foam;

   b. bottom deposits or aquatic growths;

   c. alteration of temperature or apparent color beyond present natural background levels;

d. visible, floating, suspended, or deposited oil or other products of petroleum origin;

e. toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.

b. Dissolved oxygen: 5.0 mg/l minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause lesser concentration(s) than specified above, the discharge shall not cause further reduction in the concentration of dissolved oxygen.

c. Un-ionized ammonia (as N): 0.025 mg/l annual mean
0.4 mg/l maximum

3. This discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

C. PROVISIONS

1. The discharger shall comply with all sections of this order immediately upon adoption by the Board and upon starting any discharge.

2. The discharger shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer.

3. The discharger shall also notify the Regional Board if any activity has occurred or will occur which would result in the discharge, on a frequent or routine basis, of any toxic pollutant which is not limited by this Order.

4. Any discharge to a location other than the discharge point(s) specified in this Order will require a modification to this Order or submission of a second NPDES application.

5. The discharger shall comply with all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated December 1986 and modified January 1987, except items A.10, B.2, B.3, C.8 and C.11.

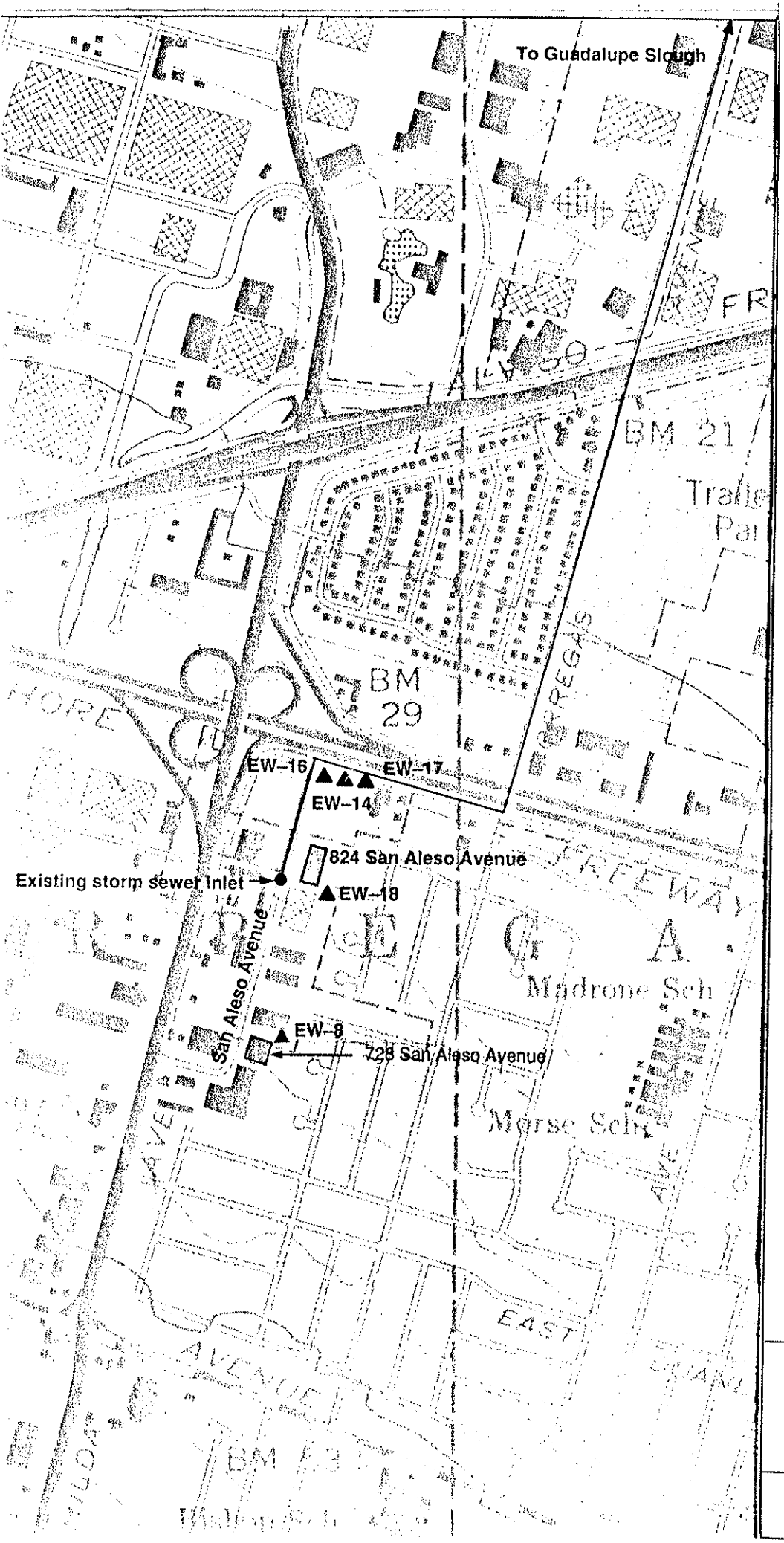
6. This Order expires January 18, 1994. The discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code no later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

7. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on January 18, 1989.

STEVEN R. RITCHIE
Executive Officer

Attachments:
Standard Provisions & Reporting Requirements, December 1986, modified January 1987
Self-Monitoring Program
Site Map



EXPLANATION

- ▲ Extraction well location
- ● Effluent discharge point
- ——— Storm drain routing

Notes

1. Adapted from U.S. Geological 7.5 minute map. Mountain View, California

N

0 500 Feet

TOPOGRAPHICAL MAP OF SITE AND VICINITY
Ampex Corporation
824 San Aleso Avenue
Sunnyvale, California

GEOMATRIX	Project No. 1240C	Figure 1

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR:

AMPEX CORPORATION
824 San Aleso Avenue
Sunnyvale, Santa Clara County

NPDES NO. CA0029475

ORDER NO. 89-007

CONSISTS OF:

PART A Dated December 1986 and modified January 1987

PART B Adopted January 18, 1989

PART B

AMPEX CORPORATION
824 SAN ALESO AVENUE
SUNNYVALE, SANTA CLARA COUNTY

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

Station	Description
I-001	At a point in the ground water extraction/ treatment system immediately prior to treatment.

B. EFFLUENT

Station	Description
E-001	At a point in the ground water extraction/ treatment system immediately following treatment and prior to discharging to the storm drain.

C. RECEIVING WATERS

Station	Description
R-001	At a point in the City of Sunnyvale's East Channel just north of Highway 237.

II. SCHEDULE OF SAMPLING AND ANALYSIS

The schedule of sampling and analysis is provided in the attached Table 1.

III. MODIFICATIONS TO PART A, DATED DECEMBER 1986 AND MODIFIED JANUARY 1987

All items of Self-Monitoring Program Part A, dated December 1986 and as modified January 1987 shall be complied with except for the following:

A. Additions to Part A: Section G.4.d.5: "Results from each required analysis and observation shall be submitted as laboratory originated data summary sheets in the quarterly self-monitoring reports. All chromatographic peaks for purgeable halocarbons and/or volatile organics shall be identified and quantified for all effluent samples. If previously unquantified peaks are identified in any effluent sample, then these peaks shall be confirmed based on analyses using chemical standards necessary to achieve proper identification and quantification. Results shall also be submitted for any additional analyses performed by the dischargers at the specific request of the Board for parameters for which effluent limits have been established and provided to the dischargers by the Board."

B. Deletions from Part A: Sections D.2.b., D.2.g., D.3.b., E.1.e.1, E.1.f., E.2.b., E.3., E.4., E.5., F.2.b., G.2., G.4.b., and G.4.f.

C. Modifications to Part A: For the following, the discharger shall comply with the Sections as changed and reported herein:

1. Section D.2.a. is changed to read:

"Samples of effluent and receiving waters shall be collected at times coincident with influent sampling unless otherwise stipulated. The Regional Board or Executive Officer may approve an alternative sampling plan if it is demonstrated that expected operating conditions warrant a deviation from the standard sampling plan."

2. Section D.2.d. is changed to read:

"If two consecutive samples of any one constituent or parameter monitored on a weekly or monthly basis in a 30-day period exceed the effluent limit or are otherwise out of compliance, or if the required sampling frequency is once per month or less (quarterly, annually or other) and the sample or parameter exceeds the limit or is otherwise out of compliance, the discharger shall implement procedure(s) acceptable to or approved by the Board's Executive Officer, on a case by case basis."

3. Section D.2.e. is changed to read:

"If any instantaneous maximum limit is exceeded, the discharge shall terminate immediately, and shall not resume until the cause of the violation is found and corrected and/or the Board's Executive Officer authorizes resumption of the discharge."

4. In Section F.1, the phrase "(at the waste treatment plant)" is changed to read, "(at the discharger's facility at 824 San Aleso Avenue in Sunnyvale)".

5. The first paragraph of Section G.4. is changed to read:

"Written reports shall be filed with the Regional Board each calendar quarter, once in April, July, October, and January, by the 30th day of each of these months. The first report is due April 30, 1989. The reports shall be comprised of the following:"

6. Section G.4.e is changed to read:

"Summary tabulations of the data shall include, for each constituent, total number of analyses, maximum, minimum, and average values for each period. Total flow data shall also be included. This information shall be prepared in a format similar to EPA Form 3320-1. This information shall be submitted only to the Regional Board:

Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
1111 Jackson Street, Room 6000
Oakland, CA 94607"

7. The Annual Report required in Section G.5. shall be submitted by January 30 of each year in place of the quarterly report due on the same day.

IV. MISCELLANEOUS REPORTING

If any chemicals or additives are proposed to be used in the operation and/or maintenance of the ground water extraction/treatment system, the discharger shall obtain the Executive Officer's concurrence prior to use. The details concerning such approved use shall be reported in the next periodic report submitted to the Board.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 89-007.

2. Was adopted by the Board on January 18, 1989.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the dischargers, and revisions will be ordered by the Executive Officer or Regional Board.

STEVEN R. RITCHIE
Executive Officer

Attachments: Table 1
Site Map

Table 1

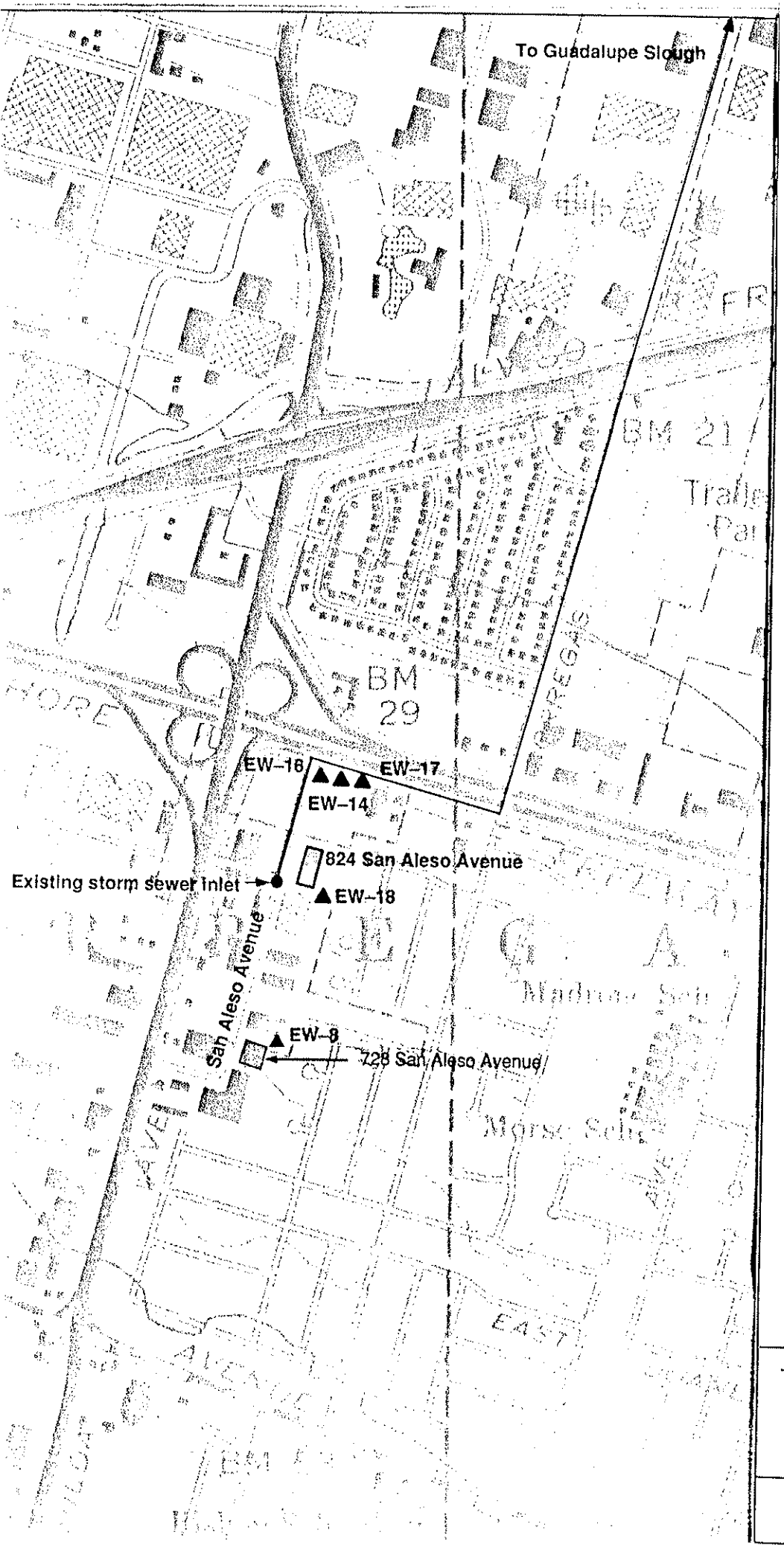
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	I-001	E-001	R-001
Sample Type	G	G	G
Flow Rate (gpd)	W	W	
Fish Toxicity, 96-hour TL% survival in undiluted waste		Y	
pH (units)		M	2/Y
Dissolved Oxygen (mg/l & % saturation)			2/Y
Ammonia Nitrogen (mg/l & kg/day)		V	
Temperature (°C)			2/Y
EPA Method 601 (ug/l)	M	2/M*	2/Y
EPA Method 624 (ug/l)	Y	Y	
Metals (standard methods for priority pollutants) (mg/l)		Y	
BOD, 5-day @ 20°C or COD (mg/l)		Y	

Types of Stations
I = influent
E = effluent
R = receiving water

Types of Samples
G = grab

Frequency of Sampling
W = weekly, once each week
M = monthly, once each month
Q = quarterly, once each April, July, October, and January
2/Y = semiannually, once in April and October
2/M* = weekly for the first three months of startup of operation and reduced to twice a month thereafter.
Y = yearly, once each year
V = varies; total ammonia nitrogen shall be analyzed and un-ionized ammonia calculated whenever fish bioassay test results fail to meet the specified percent survival.



EXPLANATION

- ▲ Extraction well location
- ● Effluent discharge point
- ——— Storm drain routing

Notes

1. Adapted from U.S. Geological 7.5 minute map. Mountain View, California

N

0 500 Feet

TOPOGRAPHICAL MAP OF SITE AND VICINITY
Ampex Corporation
824 San Aleso Avenue
Sunnyvale, California

GEOMATRIX	Project No. 1240C	Figure 1